

Abstract of the Disclosure

Provided are an apparatus and method using large-area organic vapor phase deposition for formation of organic thin films and organic devices. The apparatus includes a deposition part and a source part. The deposition part includes a process chamber; a substrate holder installed in the process chamber for supporting a loaded substrate; a substrate temperature controller installed in the substrate holder for controlling the temperature of the substrate; and a shower head installed opposite the substrate holder in the process chamber for uniformly distributing onto the substrate organic source vapors to be used for a deposition reaction. The source part includes a source chamber for generating organic source vapors to be supplied to the shower head; a source heater which surrounds the source chamber and allows organic materials to evaporate to be organic source vapors in the source chamber; and a transfer gas supply source for supplying transfer gas that is used to transfer the organic source vapors to the process chamber.